MISSISSIPPI
ENVIRONMENTAL SENSITIVITY
INDEX
METADATA

June 1996

FILE DESCRIBES: Digital data for 1995 Mississippi Environmental Sensitivity
                    Index.

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FILE CREATED ON: 19960119

COMMENTS: Information was developed using the U.S. Federal Geo-
                    graphic Data Committee's Content Standards for Digital
                    Geospatial Metadata, June 8, 1994. The numbering scheme
                    matches the Metadata Standard to facilitate referencing
                    definitions of the elements. The items in **bold** are required
                    elements and the others are optional elements. The Spatial
                    Data Transfer Standard (SDTS), ver. 03/92, was referenced to
                    properly identify the geographic entities.

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LIST OF FIGURES

1.0. IDENTIFICATION INFORMATION

1.1.   CITATION

    1.1.1.   ORIGINATOR:

    National Oceanic and Atmospheric Administration (NOAA), Office of Ocean Resources Conservation and Assessment, Seattle, Washington 98115; and Research Planning, Inc., 1200 Park Street, Post Office Box 328, Columbia, South Carolina 29202

    1.1.2.   PUBLICATION DATE:

    199512

    1.1.4.   TITLE:

    Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Mississippi

    1.1.5.   EDITION:

    First

    1.1.6.   GEOSPATIAL DATA PRESENTATION FORM:

    Atlas

    1.1.7.   SERIES INFORMATION

        1.1.7.1.   SERIES NAME:

        None

        1.1.7.2.   ISSUE IDENTIFICATION:

        Mississippi

    1.1.8.   PUBLICATION INFORMATION

        1.1.8.1.   PUBLICATION PLACE:

        Seattle, Washington

        1.1.8.2.   PUBLISHER:

        NOAA, Office of Ocean Resources Conservation and Assessment

    1.1.9.   OTHER CITATION DETAILS:

    Prepared by Research Planning, Inc., Columbia, South Carolina for the Hazardous Materials Response and Assessment Division, National Oceanic and Atmospheric Administration, Seattle, Washington and the Mississippi General Land Office

    1.1.11.   LARGER WORK CITATION:

    None

1.2. DESCRIPTION

1.2.1. ABSTRACT:

This data set comprises the Environmental Sensitivity Index (ESI) maps for the shoreline of Mississippi. ESI data characterize coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats; sensitive biological resources; and human-use resources

1.2.2. PURPOSE:

The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources

1.3. TIME PERIOD OF CONTENT

1.3.1. TIME PERIOD INFORMATION

1.3.1.3. RANGE OF DATES/TIMES:

The intertidal habitats were mapped during aerial and ground surveys conducted in 1995. The biological and human-use resources data were compiled by regional biologists in 1995. The dates for these data vary and are documented in Section 2.5.1

1.4. STATUS

1.4.1. PROGRESS:

Complete

1.4.2. MAINTENANCE AND UPDATE FREQUENCY:

None planned

1.5. SPATIAL DOMAIN

1.5.1. BOUNDING COORDINATES

1.5.1.1. WEST BOUNDING COORDINATE:

-89.75°

1.5.1.2. EAST BOUNDING COORDINATE:

-88.375°

1.5.1.3. NORTH BOUNDING COORDINATE:

30.50°

1.5.1.4. SOUTH BOUNDING COORDINATE:
30.125°

1.6 KEYWORDS

1.6.1. THEME

1.6.1.1. THEME KEYWORD THESAURUS:
None

1.6.1.2. THEME KEYWORD:
Sensitivity maps; ESI; coastal resources; oil spill planning; and coastal zone management

1.6.2. PLACE

1.6.2.1. THESAURUS:
None

1.6.2.2. PLACE KEYWORD:
Mississippi Coastal Zone, Harrison County, Jackson County, Hancock County, Gulf Islands National Seashore, Cat Island, Mississippi Sound, St. Louis Bay, Biloxi Bay, and Pascagoula Bay

1.7. ACCESS CONSTRAINTS:
None

1.8. USE CONSTRAINTS:
DO NOT USE ESI MAPS FOR NAVIGATIONAL PURPOSES.
Besides the above warning, there are no use constraints on this data. Acknowledgment of NOAA and other contributing sources would be appreciated in products derived from these data

1.11. DATA SET CREDIT:
This project was supported by NOAA's Hazardous Materials Response and Assessment Division, Robert Pavia, Project Manager.

Jennifer Buchanan at Mississippi Bureau of Marine Resources was the primary contact for the State and supplied much of the biological and human-use data. Gary Hopkins from the National Park Service provided all of the information used for the Gulf Islands National Seashore. Seagrass maps were provided by Larry Handley of the National Biological Service. Keith Baca and Joseph Giliberti of the Mississippi Department of Archives and History

provided the archaeological and historical information. Additional fishery information came from the Gulf Coast Research Laboratory. Steve Ovianki of the Mississippi Office of Geology provided the shoreline classification data. Barbara Yassin was responsible for automation of the shoreline data. John Surino of Gulf Fishing Banks provided information on artificial reefs.

At Research Planning, Inc. (RPI), Jacqueline Michel and Jeffrey Dahlin were the project scientists. Todd M. Montello participated in the field verification of the shoreline classification. James Olsen entered the data and produced the final maps under the supervision of Joanne Halls. Graphics were provided by Joe Holmes, and Dot Zaino prepared the text.

1.13. NATIVE DATA SET ENVIRONMENT:

The software packages used to develop the atlas are Environmental Systems Research Institute's Arc/INFO (version 7.0.3) and ORACLE RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80 with 4 X-terminals) with unix operating system (HP-UX Release A.09.01). The following files are included in the data set: biores.dat.e00, birdsp.e00, esil.e00, esip.e00, fishp.e00, habitatsp.e00, hydro.e00, index.e00, t_mammalsp.e00, mgtp.e00, nests.e00, points.lut.e00, polys.lut.e00, reptilesp.e00, seasonality.dat.e00, shellfishp.e00, socecon.e00, socecon.dat.e00, soc.lut.e00, sources.dat.e00, and species.dat. The entire data set is approximately 30 megabytes.

2.0. DATA QUALITY INFORMATION

2.1. ATTRIBUTE ACCURACY
2.1.1. ATTRIBUTE ACCURACY REPORT:
The attribute accuracy is estimated to be "good" given the years of ESI experience, the data input methodology, the quality control review sessions, and the digital logical consistency checks.

2.2. LOGICAL CONSISTENCY REPORT:
The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. The first layer of information digitized is the ESI shoreline. Any errors in the shoreline classification are updated prior to digitization of the biological and socioeconomic layers. All layers use the shoreline as the geographic reference so that there are no slivers in the geographic coordinates. The biological data are digitized, checked using both digital and on-screen procedures, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:50,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy.

To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE to Arc/INFO consistencies. A final review is made by the GIS manager, where data is written to tape and metadata is written.

2.3. COMPLETENESS REPORT:
Shoreline Habitat Mapping:

The shoreline habitats of Mississippi were characterized as to their sensitivity to oil spills using a shoreline classification system that has been used by NOAA for all ESI maps nationwide. Prediction of the behavior and persistence of oil on intertidal habitats is based on an understanding of the

dynamics of the coastal environments, not just the substrate type and grain size. The vulnerability of a particular habitat is an integration of the following factors:

1) Shoreline type (substrate, grain size, tidal elevation, origin)
2) Exposure to wave and tidal energy
3) Biological productivity and sensitivity
4) Ease of cleanup

All of these factors are used to determine the relative sensitivity of intertidal habitats. Key to the sensitivity ranking is an understanding of the relationships between: physical processes, substrate, shoreline type, product type, fate and effect, and sediment transport patterns. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the slowness of natural processes in removal of oil stranded on the shoreline.

These concepts have been used in the development of the ESI, which ranks shoreline environments as to their relative sensitivity to oil spills, potential biological injury, and ease of cleanup. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, whereas sheltered areas with associated high biological activity have the highest ranking.

Sensitive Biological Resources:

Regional biologists compiled the biological data. These data denote the key biological resources that are most likely at risk in the event of an oil spill. Six major categories, or elements, of biological resources were considered during data compilation: birds, fish, habitats, reptiles, shellfish, and terrestrial mammals.

The biological data contains numerous overlapping polygons. To efficiently store this information, the topological data structure, REGIONS, is used where multiple polygons are given a single attribute, RARNUM.

Each ELEMENT corresponds to a coverage or geographic theme. There are four attribute tables, BIORES, SEASONAL, SPECIES, and SOURCES, that are used to store the complex biological data (Fig. 1).

Geographic Themes

BASEMAP

ESI (ARCS)
ESI
LINE
SOURCE_ID
ESI (POLYS)
ESI
WATER_CODE
HYDRO (ARCS)
LINE
SOURCE_ID
HYDRO (POLYS)
WATER_CODE
INDEX (POLYS)
TILE-NAME
TOPO-NAME
SCALE
MAPANGLE
PAGESIZE

HUMAN-USE

MGTP (POLYS)
SOCECON
ID
SOCECON (ARCS)
SOCECON
SOCECON (POINTS)
SOCECON
ID

BIOLOGY

BIRDS (POLYS)
ID
FISH (POLYS)
ID
HABITATS (POLYS)
ID
NESTS (POINTS)
ID
REPTILES (POLYS)
ID
SHELLFSH (POLYS)
ID
T_MAMMAL (POLYS)
ID

Lookup Tables

SOC_LUT
RARNUM
ID

POLY_LUT
RARNUM
ID

PNTS_LUT
RARNUM
ID

Data Tables

SOC_DATA
RARNUM
SOC_TYPE
NAME
G_SOURCE
A_SOURCE

BIORES
RARNUM
SPECIES_ID
CONC
SEASON_ID
G_SOURCE
S_SOURCE
ELEMENT

SOURCES
SOURCE_ID
ORIGINATOR
DATE_PUB
TITLE
DATA_FORMAT
PUBLICATION
SCALE
TIME_PERIOD

SPECIES
SPECIES_ID
NAME
GEN_SPEC
STATE
S_F
T_E
DATE_PUB
ELEMENT
SUBELEMENT

SEASONAL
ELEMENT
SPECIES_ID
SEASON_ID
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
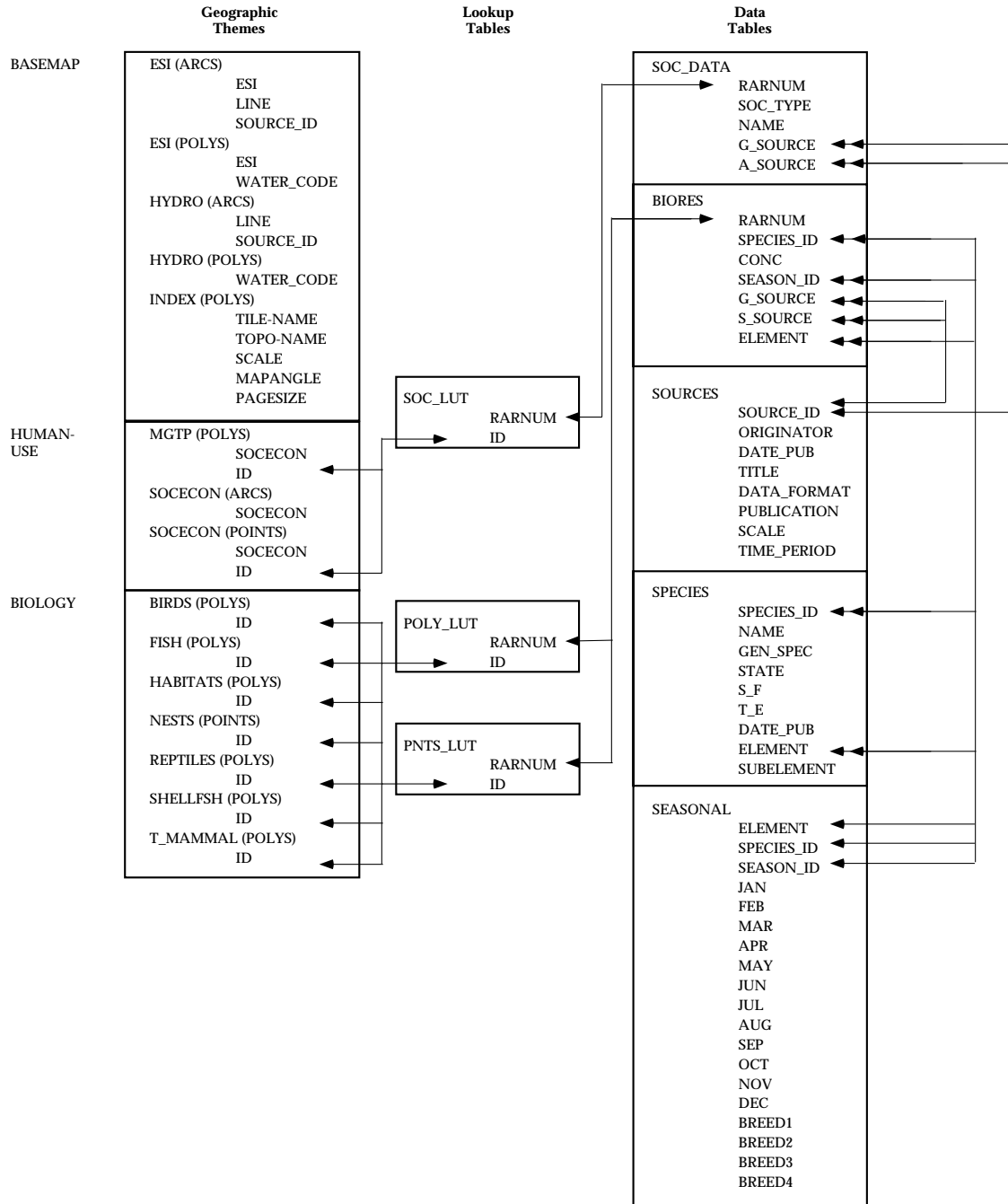BREED1
BREED2
BREED3
BREED4

FIGURE 1. Relationships between coverages and attribute files.

Each biological polygon coverage (BIRDS, FISH, HABITATS, REPTILES, SHELLFSH, and T_MAMMAL) is linked to the Biological Resources table (BIORES) using the lookup table POLY_LUT. The point coverage NESTS is linked to the BIORES table using the lookup table PNTS_LUT. The items in BIORES are: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, and ELEMENT. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be LOW, MEDIUM, or HIGH for all elements except habitats, which has values of CONTINUOUS, MODERATE, SPARSE, or VERY SPARCE. SEASON_ID contains a numeric value according to the monthly presence of the species. Usually, there is one seasonality per species, but occasionally the same species has different monthly presence or breeding activity. When this occurs, a new record with a different seasonality is referenced.

The SEASONAL table stores the monthly presence of each species and the characteristics of the presence (life history information). The BIORES table is linked to the SEASONAL table using the SPECIES_ID, ELEMENT, and SEASON_ID items. The categories of the variables BREED1 through BREED4 for each ELEMENT are:

ELEMENT	BREED 1	BREED 2	BREED 3	BREED 4
BIRD	nesting	laying	hatching	fledging
FISH	spawning	juvenile	outmigration	
REPTILE	nesting	hatching		
SHELLFISH	spawning	juvenile		

NOTE: There are no BREED variables for HABITATS or T_MAMMALS.

The SPECIES table contains the species ID (SPECIES_ID), common name (NAME), the scientific name (GEN_SPEC), the two-letter state abbreviation for listed species (STATE), the state and federal status (S_F), the threatened or endangered status (T_E), the date of the list (DATE_PUB), the species element (ELEMENT), and the species sub-group (SUBELEMENT). The item SUBELEMENT refers to the grouping of the species. The SUBELEMENTS, by ELEMENT, included in this atlas are:

ELEMENT	SUBELEMENT
BIRD	diving
	gull_tern
	pelagic
	raptor
	shorebird
	wading
	waterfowl
FISH	anadromous
	special
HABITAT	submerged aquatic vegetation
REPTILE	alligator
	snake
	turtle
SHELLFISH	clam
	crab
	oyster
	scallop
	shrimp
TERRESTRIAL MAMMAL	small mammal

The BIORES items G_SOURCE and S_SOURCE refer to the geographic and seasonality sources and link to the SOURCES table.

Human Use Resources:

Several human-use, or socioeconomic, features are included in ESI atlases. Entity points and complete chains (arcs) are digitized into the coverage SOCECON and managed land polygonal data are stored in the MGTP coverage. Both data sets are linked to the table SOC_DATA using the SOC_LUT and items RARNUM and ID. ID is a concatonation of atlas number (32), element number (SOCECON = 10 and Managed Lands = 11), and unique record number.

ENTITY POINTS (.PAT)		COMPLETE CHAINS (.AAT)		POLYGONS (.PAT)	
Item	Type	Item	Type	Item	Type
SOCECON	C	SOCECON	C	SOCECON	C
ID	I			ID	I

Complete chains are digitized and attributed in the variable LINE for the following features. The SOCECON item may contain the following values:

Entity Points			Polygons	
Feature	**SOCECON**		**Feature**	**SOCECON**
Airport	A		National Park	NP
Archaeological Site	AS		Recreational Beach	B
Boat Ramp	BR		Regional or State Park	P
Ferry	F		Wildlife Refuge	WR
Marina	M			
Recreational Fishing	RF			
Complete Chains				
Feature	**LINE**			
National Park	NP			
State Border	SB			

The table SOC_DATA contains the resource at risk number (RARNUM), the feature type (SOC_TYPE), the name of the facility (NAME), the geographic source (G_SOURCE), and the attribute source (A_SOURCE). The RARNUM value is distinguished from the biology RARNUM values by an "H" preceding the unique number.

2.4. POSITIONAL ACCURACY
2.4.1. HORIZONTAL POSITIONAL ACCURACY
2.4.1.1. HORIZONTAL POSITIONAL ACCURACY REPORT:

The ESI data uses USGS 1:24,000 topographic quadrangles as the base map. It is estimated that the ESI has a minimum mapping unit of 50 feet. The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature migrate across the landscape. Therefore, the 1:24,000 USGS quadrangles are used as a base map in gathering the data but the data have "fuzzy" boundaries that must be understood when utilizing this information.

2.5.   LINEAGE

2.5.1.   SOURCE INFORMATION:

Coverage or theme name: BIRDS

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Gary Hopkins, National Park Service	1995	Distribution of Gulf Islands National Seashore Birds	Expert knowledge and maps	Unknown	24000	1995
Jennifer Buchanan, Department of Marine Resources	1995	Distribution of Nearshore Birds Distribution	Expert knowledge and maps	Unknown	24000	1995
Thomas Mann, Natural Heritage Program	1995	Mississippi Natural Heritage Program Database	Digital ASCII	N/A	Unknown	1970-1995
U.S. Fish and Wildlife Service	1983	Atlas of Wading Bird and Seabird Nesting Colonies in Coastal Louisiana, Mississippi, and Alabama: 1983	Report	Report No. FWS/OBS-84/13	N/A	1983

2.5.1. SOURCE INFORMATION:

Coverage or theme name: ESIL

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Steve Ovainke, Mississippi Department of Environmental Quality	1994	Environmental Sensitivity Index draft maps	Videotape and maps	N/A	24000	1994
U.S. Fish and Wildlife Service	Varies	Mississippi State Geo-graphic Database (MARIS)	Digital complex polygons and chains	Data is from the National Wetlands Inventory	24000	Varies
U.S. Geological Survey	Varies	7.5 minute topographic maps	Maps	USGS, Reston, Va.	24000	Varies
Research Planning, Inc.	N/A	ESI Shorelines	Maps	N/A	24000	1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: ESIP

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Steve Ovainke, Mississippi Department of Environmental Quality	1994	Environmental Sensitivity Index draft maps	Videotape and maps	N/A	24000	1994
U.S. Fish and Wildlife Service	Varies	Mississippi State Geo-graphic Database (MARIS)	Digital complex polygons and chains	Data is from the National Wetlands Inventory	24000	Varies
U.S. Geological Survey	Varies	7.5 minute topographic maps	Maps	USGS, Reston, Va.	24000	Varies
Research Planning, Inc.	N/A	ESI Shorelines	Maps	N/A	24000	1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: FISH

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi- nator	2.5.1.4 Source Time Period
Gulf Coast Research Lab	1973	Cooperative Gulf of Mexico Estuarine Inventory and Study, Mississippi	Report	Gulf Coast Research Laboratory, Ocean Springs, Miss.	N/A	1968-1969
Jennifer Buchanan, Department of Marine Resources	1995	Distribution of Nearshore Fish	Expert knowledge and maps	Unknown	24000	1995
Mississippi Department of Wildlife Conservation, Bureau of Marine Resources	1984	A Contingency Guide to the Protection of Mississippi Coastal Environments from Spilled Oil	Maps	Mississippi Department of Conservation,m Bureau of Marine Resources, Long Beach, Miss.	40000	1984

2.5.1. SOURCE INFORMATION:

Coverage or theme name: HABITATS

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi- nator	2.5.1.4 Source Time Period
Gary Hopkins, National Park Service	1995	Distribution of Gulf Islands National Seashore Seagrass	Maps	Unknown	24000	1995
Jennifer Buchanan, Department of Marine Resources	1995	Distribution of Nearshore Seagrass	Expert knowledge and maps	Unknown	24000	1995

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Heidi Roberts, Gulf Regional Planning Commission	1995	Environ-mentally Sensitive Area maps	Maps	None	40000	Unknown
Larry Handley, National Biological Service	1995	National Biological Service, Submerged Aquatic Vegetation	Expert knowledge and maps	Unknown	24000	1992
Mississippi Department of Wildlife Conservation, Bureau of Marine Resources	1984	A Contingency Guide to the Protection of Mississippi Coastal Environments from Spilled Oil	Maps	Mississippi Department of Conservation,m Bureau of Marine Resources, Long Beach, Miss.	40000	1984

2.5.1. SOURCE INFORMATION:

Coverage or theme name: HYDRO

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Steve Ovainke, Mississippi Department of Environmental Quality	1994	Environmental Sensitivity Index draft maps	Videotape and maps	N/A	24000	1994
U.S. Fish and Wildlife Service	Varies	Mississippi State Geographic Database (MARIS)	Digital complex polygons and chains	Data is from the National Wetlands Inventory	24000	Varies
U.S. Geological Survey	Varies	7.5 minute topographic maps	Maps	USGS, Reston, Va.	24000	Varies
Research Planning, Inc.	N/A	ESI Shorelines	Maps	N/A	24000	1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: INDEX

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi- nator	2.5.1.4 Source Time Period
Research Planning, Inc.	1995	Index for Mississippi ESI maps	Digital complex polygons	Bill Holton, GIS Analyst	24000	1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: MGTP

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi- nator	2.5.1.4 Source Time Period
Gary Hopkins, National Park Service	1995	Distribution of Gulf Islands National Seashore Human-use Features	Expert knowledge and maps	Unknown	24000	1995
Jennifer Buchanan, Department of Marine Resources	1995	Distribution of Nearshore Human-use Features	Expert knowledge and maps	Unknown	Varies	1995
Heidi Roberts, Gulf Regional Planning Commission	1995	Environ- mentally Sensitive Area maps	Maps	None	40000	Unknown
Keith Baca and Joseph Gilinberti, Mississippi Department of Archives and History	1995	Archaeological and Historical Sites	Hardcopy maps and digital tables	N/A	24000	1995
Research Planning, Inc.	1995	ESI Shoreline	Overflight maps	N/A	24000	1995
U.S. Geological Survey	Varies		Topographic maps	USGS, Reston, Va.	24000	Varies

2.5.1. SOURCE INFORMATION:

Coverage or theme name: NESTS

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Gary Hopkins, National Park Service	1995	Distribution of Gulf Islands National Seashore Birds	Expert knowledge and maps	Unknown	24000	1995
Jennifer Buchanan, Department of Marine Resources	1995	Distribution of Nearshore Birds	Expert knowledge and maps	Unknown	24000	1995
Thomas Mann, Mississippi Natural Heritage Program	1995	Mississippi Natural Heritage Program Database	Digital ASCII	N/A	Unknown	1970-1995
U.S. Fish and Wildlife Service	1983	Atlas of Wading Bird and Seabird Nesting Colonies in Coastal Louisiana, Mississippi, and Alabama: 1983	Report	Report No. FWS/OBS-84/13	N/A	1983

2.5.1. SOURCE INFORMATION:

Coverage or theme name: REPTILES

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Gary Hopkins, National Park Service	1995	Distribution of Gulf Islands National Seashore Reptiles	Expert knowledge and maps	N/A	24000	1995

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Thomas Mann, Mississippi Natural Heritage Program	1995	Mississippi Natural Heritage Program Database	Digital ASCII	N/A	Unknown	1970-1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: SHELLFSH

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Gulf Coast Research Lab	1973	Cooperative Gulf of Mexico Estuarine Inventory and Study, Miss.	Report	Gulf Coast Research Laboratory, Ocean Springs, Miss.	N/A	1968-1969
Jennifer Buchanan, Department of Marine Resources	1995	Distribution of Nearshore Shellfish	Expert knowledge and maps	N/A	24000	1995
Heidi Roberts, Gulf Regional Planning Commission	1995	Environ-mentally Sensitive Area maps	Maps	None	40000	Unknown
David M. Nelson, and regional, state, and local scientists	1989	NOAA's Estuarine Living Marine Resources Program: Distribution and Abundance of Fishes and Invertebrates in Gulf of Mexico Estuaries: Volume 1: Data Summaries	Digital, ASCII	N/A	Varies	1989

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Office of Oceanography and Marine Assessment, National Ocean Service and the Southeast Fisheries Center	1985	Gulf of Mexico Coastal and Ocean Zones Strategic Assessment: Data Atlas	Expert knowledge and maps	NOAA, Department of Commerce, Washington, D.C.	Varies	1985

2.5.1. SOURCE INFORMATION:

Coverage or theme name: SOCECON

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Gary Hopkins, National Park Service	1995	Distribution of Gulf Islands National Seashore Human-use Features	Expert knowledge and maps	Unknown	24000	1995
Jennifer Buchanan, Department of Marine Resources	1995	Distribution of Nearshore Human-use Features	Expert knowledge and maps	Unknown	Varies	1995
Heidi Roberts, Gulf Regional Planning Commission	1995	Environ-mentally Sensitive Area maps	Maps	None	40000	Unknown
Keith Baca and Joseph Gilinberti, Mississippi Department of Archives and History	1995	Archaeological and Historical Sites	Hardcopy maps and digital tables	N/A	24000	1995
Research Planning, Inc.	1995	ESI Shoreline	Overflight maps	N/A	24000	1995
U.S. Geological Survey	Varies		Topographic maps	USGS, Reston, Va.	24000	Varies

2.5.1.   SOURCE INFORMATION:

Coverage or theme name: T_MAMMAL

2.5.1.1. SOURCE CITATION

2.5.1.1.1	2.5.1.1.2	2.5.1.1.4	2.5.1.1.6	2.5.1.1.8	2.5.1.2	2.5.1.4
Originator	Publication Date	Title	Geospatial Data Presentation Form	Publication Information	Source Scale Denomi- nator	Source Time Period
Gary Hopkins, National Park Service	1995	Distribution of Gulf Islands National Seashore Terrestrial Mammals	Expert knowledge and maps	Unknown	24000	1995
Jennifer Buchanan, Department of Marine Resources	1995	Distribution of Nearshore Terrestrial Mammals	Expert knowledge and maps	N/A	24000	1995

2.5.2.   PROCESS STEP

2.5.2.1. PROCESS DESCRIPTION:

The digitization of ESI, biological resources, and human-use resources is a complex and highly quality-controlled process. In order to facilitate digitizing, the entire study area was split into individual quadrangles using a map index coverage. The first layer of information digitized is the ESI. Any errors in the shoreline classification are updated prior to digitization of the biological and socioeconomic layers. All data use the shoreline as the geographic reference so that there are no slivers in the geographic layers. The biological information is compiled onto 1:24,000 USGS topographic quadrangles by an in-house biological expert using the data from regional specialists in the form of verbal discussions, maps, tables, charts, and written descriptions of wildlife distributions. The data are digitized, checked using both digital and on-screen procedures, plotted, and sent out for review by the regional specialists. The edited maps are updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are merged to form the study-wide layers described in this document. The data merging includes a final quality

control check where topological consistency, rules for geography, and database to geography are checked and reported to the GIS manager.

2.5.2.3. PROCESS DATE:

199512

2.5.2.6. PROCESS CONTACT

2.5.2.6.1. CONTACT PERSON PRIMARY

2.5.2.6.1.1. CONTACT PERSON:

Jill Petersen

2.5.2.6.1.2. CONTACT ORGANIZATION:

NOAA HMRAD

2.5.2.6.3. CONTACT POSITION:

GIS Manager

2.5.2.6.4. CONTACT ADDRESS

2.5.2.6.4.1. ADDRESS TYPE:

Physical Address

2.5.2.6.4.2. ADDRESS:

7600 Sand Point Way, N.E.

Bin C15700

2.5.2.6.4.3. CITY:

Seattle

2.5.2.6.4.4. STATE OR PROVINCE:

W A

2.5.2.6.4.5. POSTAL CODE:

98115

2.5.2.6.5. CONTACT VOICE TELEPHONE:

(206) 526-6944

2.5.2.6.7. CONTACT FACSIMILE TELEPHONE:

(206) 526-6329

2.5.2.6.8. CONTACT ELECTRONIC MAIL ADDRESS:

jill_petersen@hazmat.noaa.gov.us

3.0. SPATIAL DATA ORGANIZATION INFORMATION

3.2.   DIRECT SPATIAL REFERENCE METHOD:
Vector

3.3.   POINT AND VECTOR OBJECT INFORMATION
3.3.1.   SDTS TERMS DESCRIPTION:
3.3.1.1. SDTS POINT AND VECTOR OBJECT TYPE, and
3.3.1.2. POINT AND VECTOR OBJECT COUNT:

Theme	Universe Polygon	GT-Polygons	Area Points	Complete Chains	Line Segments	Label Points	Entity Points	Nodes
BIRDS	1	104	104	373	76,033			295
ESIL	1			3,582	147,200			10,610
ESIP	1	2,481	2,481	2,630	126,503			2,586
FISH	1	627	627	1,046	149,142			961
HABITATS	1	76	76	101	9,501			91
HYDRO	1	3,060	3,060	12,015	249,320	283		12,249
INDEX	1	29	29	72	72			44
MGTP	1	26	26	27	1,921			26
NESTS							14	
REPTILES	1	51	51	222	63,374			194
SHELLFSH	1	667	667	1,044	144,742			965
SOCECON				4	627	417		9
T_MAMMAL	1	46	46	216	62,747			190

4.0. SPATIAL REFERENCE INFORMATION

4.1. HORIZONTAL COORDINATE SYSTEM DEFINITION

4.1.1. GEOGRAPHIC

4.1.1.1. LATITUDE RESOLUTION

0.00005

4.1.1.2. LONGITUDE RESOLUTION

0.00005

4.1.1.3. GEOGRAPHIC COORDINATE UNITS:

Decimal Degrees

4.1.4. GEODETIC MODEL

4.1.4.1. HORIZONTAL DATUM NAME:

North American Datum of 1927

4.1.4.2. ELLIPSOID NAME:

Clarke, 1866

4.1.4.3. SEMI-MAJOR AXIS:

6,378,206.4

4.1.4.4. DENOMINATOR OF FLATTENING RATIO:

294.98

5.0. ENTITY AND ATTRIBUTE INFORMATION

5.1. DETAILED DESCRIPTION: BIRDS

This coverage contains the polygons with bird species.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the POLY_LUT table. The POLY_LUT is a lookup table with two attributes: ID and RARNUM. ID is a concatonation of atlas number (32), element number (1), and record number. ID values of zero are holes in polygons and do not contain information. In the look-up table, the value of RARNUM is determined for each unique combination of ELEMENT, SPECIES_ID, SEASON_ID, and CONC and links to the biology table, BIORES. The items in BIORES are: RARNUM, SPECIES_ID, CONC, SEASON_ID, EXPERT_ID, and ELEMENT. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be LOW, MEDIUM, or HIGH or an actual count of the numbers of species present in the polygon. SEASON_ID contains a numeric value according to the monthly presence of the species. Usually, there is one seasonality per species, but occasionally the same species has different monthly presence or breeding activity. When this occurs, a new record with a different seasonality is referenced.

The following BIRDS species are found in the Mississippi ESI atlas:

SPECIES ID	NAME
1	Common loon
5	Horned grebe
8	Double-crested cormorant
15	Snow goose
16	Mallard
17	Northern pintail
18	Green-winged teal
20	Northern shoveler
21	Canvasback
22	Greater scaup
23	Lesser scaup
24	Common goldeneye
26	Bufflehead
27	Oldsquaw
33	Red-breasted merganser
34	American coot
38	Herring gull
40	Ring-billed gull
42	Bonaparte's gull
54	Great blue heron
67	Sanderling
69	Semipalmated plover
70	Killdeer
71	Black-bellied plover
76	Bald eagle
77	Osprey
86	Least tern
87	Little blue heron
88	Great egret
89	Snowy egret
90	Black-crowned night heron
93	Cattle egret
94	Tricolored heron
97	Green-backed heron
98	Laughing gull
107	Peregrine falcon
115	White ibis
118	Brown pelican
120	Yellow-crowned night heron
124	Redhead
125	Clapper rail
127	Sooty tern
133	Black skimmer
135	Sandwich tern

SPECIES ID	NAME
136	Caspian tern
137	Royal tern
139	Snowy plover
150	Black rail
152	American oystercatcher
153	Piping plover
154	Wilson's plover
155	Willet
162	Gadwall
163	Reddish egret
167	Northern gannet
169	American wigeon
173	American white pelican
178	Least bittern
179	Pied-billed grebe
180	Ring-necked duck
181	Northern harrier
184	King rail
185	American bittern
189	Yellow rail
190	Blue-winged teal
192	Common moorhen
193	Black tern
198	Hooded merganser
211	Mottled duck
212	Purple gallinule
298	Mississippi sandhill crane

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

integer

5.1.   DETAILED DESCRIPTION: ESIL

The coverage ESIL contains arc (Complete Chains) features for the ESI shoreline classification and is based on *Guidelines for Developing Digital Environmental Sensitivity Index Atlases and Data-bases* (Michel, J. and J. Dahlin, 1993, Hazardous Materials Response and Assessment Division, NOAA). The ESI classification was performed 20-26 October 1992.

5.1.1.   ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	**5.1.1.2. ENTITY TYPE DEFINITION:**	
Complete Chain	ESI	character
	LINE	character
	SOURCE_ID	integer

5.1.2.   ATTRIBUTES:

   5.1.2.1.   ATTRIBUTE LABEL:

   ESI

   5.1.2.2.   ATTRIBUTE DEFINITION:

   The item ESI contains values according to the ESI ranking of the shorelines and polygons. The ESI rankings progress from low to high susceptibility to oil spills. The Mississippi shoreline types are listed below. In many cases, the shorelines are also ranked with multiple codes such as 10/7. The first number is the most landward shoreline type, salt marsh, with exposed tidal flats being the shoreline type closest to the water.

   5.1.2.3.   ATTRIBUTE DEFINITION SOURCE:

   Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1	Exposed Walls and Other Solid Structures Made of Concrete, Wood, or Metal
1/10A	Exposed Walls and Other Solid Structures made of Concrete, Wood, or Metal/Salt and Brackish Water Marshes
1/3A	Exposed Walls and Other Solid Structures made of Concrete, Wood, or Metal/Fine-grained Sand Beaches
1/3A/1	Exposed Walls and Other Solid Structures made of Concrete, Wood, or Metal/Fine-grained Sand Beaches/ Exposed Walls and Other Solid Structures made of Concrete, Wood, or Metal
3A	Fine-grained Sand Beaches
3A/7	Fine-grained Sand Beaches/Exposed Tidal Flats
3A/10A	Fine-grained Sand Beaches/Salt and Brackish Water Marshes
3B	Scarps and Steep Slopes in Sand
3B/1	Scarps and Steep Slopes in Sand/Exposed Walls and Other Solid Structures made of Concrete, Wood, or Metal
3B/3A	Scarps and Steep Slopes in Sand/Fine-grained Sand Beaches
5	Mixed Sand and Gravel (Shell) Beaches
6A	Gravel (Shell) Beaches
6B	Exposed Riprap Structures
7	Exposed Tidal Flats
8A	Sheltered Solid Man-made Structures
8A/10A	Sheltered Solid Man-made Structures/Salt and Brackish Water Marshes
8B	Sheltered Riprap Structures
8C	Sheltered Scarps
8C/3A	Sheltered Scarps/Fine-grained Sand Beaches
8C/5	Sheltered Scarps/Mixed Sand and Gravel (Shell) Beaches
8C/8A	Sheltered Scarps/Sheltered Solid Man-made Structures
8C/8B	Sheltered Scarps/Sheltered Riprap Structures
9B	Riverine Banks with Grasses or Trees
10A	Salt and Brackish Water Marshes
10A/3A	Salt and Brackish Water Marshes/Fine-grained Sand Beaches
10A/7	Salt and Brackish Water Marshes/Exposed Tidal Flats
10A/8A	Salt and Brackish Water Marshes/Sheltered Solid Man-made Structures
10A/8C	Salt and Brackish Water Marshes/Sheltered Scarps

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
10A/10C	Salt and Brackish Water Marshes/Freshwater Swamps (Woody Vegetation)
10B	Freshwater Marshes (Herbaceous Vegetation)
10C	Freshwater Swamps (Woody Vegetation)
10C/10A	Freshwater Swamps (Woody Vegetation)/Salt and Brackish Water Marshes

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

ordered

5.1.2.1. ATTRIBUTE LABEL:

LINE

5.1.2.2. ATTRIBUTE DEFINITION:

Type of geographic feature

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
H	Hydrography or stream features
S	Shoreline
F	Flat
P	Pier

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SOURCE_ID

5.1.2.2. ATTRIBUTE DEFINITION:

Data source for the ESI

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
0	Original Digital Data
1	Overflight
3	Table Digitization from USGS Quadrangle
4	Digital Update
6	NWI

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: ESIP

The coverage ESIP contains polygonal (GT-Polygons) features for the ESI shoreline classification and is based on *Guidelines for Developing Digital Environmental Sensitivity Index Atlases and Data-bases* (Michel, J. and J. Dahlin, 1993, Hazardous Materials Response and Assessment Division, NOAA). The ESI classification was performed 20-26 October 1992.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	**5.1.1.2. ENTITY TYPE DEFINITION:**	
GT-Polygons	ESI	character
	WATER_CODE	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ESI

5.1.2.2. ATTRIBUTE DEFINITION:

The item ESI contains values according to the ESI ranking of the shorelines and polygons. The ESI rankings progress from low to high susceptibility to oil spills. The Mississippi shoreline types are listed below. In many cases, the shorelines are also ranked with multiple codes such as 10/7. The first number is the most landward shoreline type, salt marsh, with exposed tidal flats being the shoreline type closest to the water.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**
7	Exposed Tidal Flats
10A	Salt and Brackish Water Marshes
U	Unranked holes

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
Ordered

5.1.2.1. ATTRIBUTE LABEL:
WATER_CODE

5.1.2.2. ATTRIBUTE DEFINITION:
 Specifies a polygon as either water or land

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**
W	Water
L	Land
U	Unranked holes

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1. DETAILED DESCRIPTION: FISH

The coverage FISH contains the polygons with fish species.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the POLY_LUT table. The POLY_LUT is a lookup table with two attributes: ID and RARNUM. ID is a concatonation of atlas number (32), element number (7), and record number. ID values of zero are holes in polygons and do not contain information. In the look-up table, the value of RARNUM is determined for each unique combination of ELEMENT, SPECIES_ID, SEASON_ID, and CONC and links to the biology table, BIORES. The items in BIORES are: RARNUM, SPECIES_ID, CONC, SEASON_ID, EXPERT_ID, and ELEMENT. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be LOW, MEDIUM, or HIGH or an actual count of the numbers of species present in the polygon. SEASON_ID contains a numeric value according to the monthly presence of the species. Usually, there is one seasonality per species, but occasionally the same species has different monthly presence or breeding activity. When this occurs, a new record with a different seasonality is referenced.

The following FISH species are found in the Mississippi ESI atlas:

SPECIES ID	NAME
48	Whitespotted greenling
65	Bluefish
102	Atlantic sturgeon
103	Threadfin shad
104	Striped bass
107	Spotted seatrout
109	Red drum
111	Southern flounder
112	Gulf flounder
113	Bay anchovy
114	Florida pompano
116	Striped mullet
117	Pinfish
119	Silver perch
120	Pigfish
121	Spot
122	Black drum
123	Atlantic croaker
124	Southern kingfish (whiting)
126	King mackerel
127	Spanish mackerel
128	Blue runner
129	Atlantic thread herring
130	Scaled sardine
134	Cobia
137	Sheepshead
140	Ladyfish
142	Crevalle jack
143	Tarpon
153	Northern kingfish
163	Gizzard shad
173	White mullet
179	Largemouth bass
182	Bluegill
200	Blue catfish
201	Channel catfish
204	Redear sunfish
206	Spotted sunfish
213	Gulf menhaden
214	Gulf kingfish
215	Sand seatrout
217	Gafftopsail catfish
243	Longear sunfish

SPECIES ID	NAME
268	Silver seatrout
269	Gulf killifish
270	Longnose killifish
271	Inland silverside
273	Star drum
274	Sheepshead minnow
278	Little tunny
281	Seatrout
287	Hardhead catfish
289	Skipjack herring
290	Striped anchovy
291	Shiners
293	Southern hake
294	Spotted hake
295	Halfbeak
297	Marsh killifish
299	Rainwater killifish
300	Sailfin molly
301	Rough silverside
302	Gag grouper
304	Rough scad
305	Red snapper
306	Gray snapper
307	Lane snapper
308	Rock sea bass
309	Spotfin mojarra
310	Atlantic spadefish
312	Harvestfish
313	Gulf butterfish
315	Blacktip shark
316	Spinner shark
317	Bull shark
318	Atlantic sharpnose shark
319	Gulf sturgeon

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1. DETAILED DESCRIPTION: HABITATS

The coverage HABITATS contains the polygons with plant species.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the POLY_LUT table. The POLY_LUT is a lookup table with two attributes: ID and RARNUM. ID is a concatonation of atlas number (32), element number (1), and record number. ID values of zero are holes in polygons and do not contain information. In the look-up table, the value of RARNUM is determined for each unique combination of ELEMENT, SPECIES_ID, SEASON_ID, and CONC and links to the biology table, BIORES. The items in BIORES are: RARNUM, SPECIES_ID, CONC, SEASON_ID, EXPERT_ID, and ELEMENT. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be CONTINUOUS, MODERATE, SPARSE, or VERY SPARCE or an actual count of the numbers of species present in the polygon. SEASON_ID contains a numeric value according to the monthly presence of the species. Usually, there is one seasonality per species, but occasionally the same species has different monthly presence or breeding activity. When this occurs, a new record with a different seasonality is referenced.

The following HABITATS species are found in the Mississippi ESI atlas:

SPECIES ID	NAME
85	Seagrass

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
integer

5.1. DETAILED DESCRIPTION: HYDRO

The coverage HYDRO contains polygonal water and land features as well as linear features for rivers/streams that are tidally influenced.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	WATER_CODE	character
Complete Chains	LINE	character
	SOURCE_ID	character

The LINE, SOURCE_ID, and WATER_CODE attributes are the same as in the ESIL coverage. This coverage contains all annotation used in producing the atlas. The annotation features are categorized into three subclasses in order to simplify the mapping and quality control procedures: geog or geographic features, soc or socioeconomic features and hydro or water features.

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:
WATER_CODE

5.1.2.2. ATTRIBUTE DEFINITION:
Specifies a polygon as either water or land

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
W	Water
L	Land

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
Ordered

5.1. DETAILED DESCRIPTION: INDEX

The coverage INDEX contains the map boundaries for each quad/map in the atlas.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	**5.1.1.2. ENTITY TYPE DEFINITION:**	
GT-Polygons	TILE-NAME	character
	TOPO-NAME	character
	SCALE	integer
	MAPANGLE	fraction
	PAGESIZE	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

TILE-NAME

5.1.2.2. ATTRIBUTE DEFINITION:

The TILE-NAME contains the map number according to the specified layout of the atlas. During the map production process, the value of TILE-NAME is plotted on the map product to order the maps in a coherent manner. The values for each polygon are unique and range from 1 through 29.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

Ordered

5.1.2.1. ATTRIBUTE LABEL:

TOPO-NAME

5.1.2.2. ATTRIBUTE DEFINITION:

USGS 1:24,000 topographic map name. Some polygons straddle two or more maps and all map names are included in this attribute. The date (latest/revised) of the USGS maps are also included in this field.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

BAY ST. LOUIS, MISS. (1976)

BILOXI, MISS. (1976)

CAT ISLAND, MISS.-LA. (1994)

DEER ISLAND, MISS. (1970)

DOG KEYS PASS, MISS. (1970)

ENGLISH LOOKOUT, LA.-MISS. (1976)

GAUTIER NORTH, MISS. (1982)

GAUTIER SOUTH, MISS. (1982)

GRAND BAY SW, MISS.-ALA. (1977)

GRAND ISLAND PASS, MISS.-LA. (1976)

GULFPORT NORTH, MISS. (1985)

GULFPORT NORTHWEST, MISS. (1985)

GULFPORT SOUTH, MISS. (1994)

HAASWOOD, LA.-MISS. (1976)

HORN ISLAND EAST, MISS. (1982)

HORN ISLAND WEST, MISS. (1982)

ISLE AU PITRE, LA.-MISS. (1994)

KREOLE, MISS.-ALA. (1986)

LOGTOWN, MISS. (1976)

OCEAN SPRINGS, MISS. (1987)

PASCAGOULA NORTH, MISS. (1982)

PASCAGOULA SOUTH, MISS. (1982)

PASS CHRISTIAN, MISS. (1994)

PETIT BOIS ISLAND, MISS.-ALA. (1982)

SHIP ISLAND, MISS. (1970)

VIDALIA, MISS. (1976)

WAVELAND, MISS. (1976)

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
Nominal

5.1.2.1. ATTRIBUTE LABEL:
SCALE

5.1.2.2. ATTRIBUTE DEFINITION:
SCALE contains the value of the denominator of the scale at which the INDEX polygon is plotted in the final map product.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

50,000

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

Nominal

5.1.2.1. ATTRIBUTE LABEL:

MAPANGLE

5.1.2.2. ATTRIBUTE DEFINITION:

MAPANGLE contains a value (usually negative) to rotate the final map product so that it is situated straight up and down.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

0.00
1.00

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

Nominal

5.1.2.1. ATTRIBUTE LABEL:

PAGESIZE

5.1.2.2. ATTRIBUTE DEFINITION:

PAGESIZE contains the value of the width and height of the map in the final map product.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

11,17

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

Nominal

5.1.   DETAILED DESCRIPTION: MGTP

The coverage MGTP contains the polygons and complete chains for the human-use data.

5.1.1.   ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	SOCECON	character
	ID	character

5.1.2.   ATTRIBUTES:

5.1.2.1.   ATTRIBUTE LABEL:

ID

5.1.2.2.   ATTRIBUTE DEFINITION:

A unique identifier that links to the SOC_LUT table. SOC_LUT is a lookup table with two attributes: ID and RARNUM. RARNUM is the link to the socioeconomic data found in the SOC_DATA table. The table SOCECON. DAT contains feature type, contact person, owner of the facility, phone number, and any comments regarding the site. The RARNUM value is distinguished from the biology RARNUM values by an "H" preceeding the unique number.

5.1.2.3.   ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5.   ATTRIBUTE UNITS OF MEASUREMENT:

integer

5.1.2.1.   ATTRIBUTE LABEL:

SOCECON

5.1.2.2.   ATTRIBUTE DEFINITION:

Identifies polygons with a socioeconomic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC_DATA table.

5.1.2.3.   ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
W R	Wildlife Refuge
B	Recreational Beach
P	State Park
NP	National Park

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.   DETAILED DESCRIPTION: NESTS

The coverage NESTS contains entity points representing nesting sites.

5.1.1.   ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer

5.1.2.   ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the POLY_LUT table. The POLY_LUT is a lookup table with two attributes: ID and RARNUM. ID is a concatonation of atlas number (32), element number (5), and record number. ID values of zero are holes in polygons and do not contain information. In the look-up table, the value of RARNUM is determined for each unique combination of ELEMENT, SPECIES_ID, SEASON_ID, and CONC and links to the biology table, BIORES. The items in BIORES are: RARNUM, SPECIES_ID, CONC, SEASON_ID, EXPERT_ID, and ELEMENT. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be LOW, MEDIUM, or HIGH or an actual count of the numbers of species present in the polygon. SEASON_ID contains a numeric value according to the monthly presence of the species. Usually, there is one seasonality per species, but occasionally the same species has different monthly presence or breeding activity. When this occurs, a new record with a different seasonality is referenced. The following NESTS are found in the Mississippi ESI atlas:

SPECIES ID	NAME
54	Great blue heron
86	Least tern
133	Black skimmer
135	Sandwich tern
137	Royal tern

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

integer

5.1. DETAILED DESCRIPTION: REPTILES

The coverage REPTILES contains the polygons with reptile species.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:
ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the POLY_LUT table. The POLY_LUT is a lookup table with two attributes: ID and RARNUM. ID is a concatonation of atlas number (32), element number (6), and record number. ID values of zero are holes in polygons and do not contain information. In the look-up table, the value of RARNUM is determined for each unique combination of ELEMENT, SPECIES_ID, SEASON_ID, and CONC and links to the biology table, BIORES. The items in BIORES are: RARNUM, SPECIES_ID, CONC, SEASON_ID, EXPERT_ID, and ELEMENT. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be LOW, MEDIUM, or HIGH or an actual count of the numbers of species present in the polygon. SEASON_ID contains a numeric value according to the monthly presence of the species. Usually, there is one seasonality per species, but occasionally the same species has different monthly presence or breeding activity. When this occurs, a new record with a different seasonality is referenced.

The following REPTILES species are found in the Mississippi ESI atlas:

SPECIES ID	NAME
3	American alligator
6	Atlantic loggerhead sea turtle
12	Gulf salt marsh snake
18	Mississippi diamondback terrapin

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

integer

5.1.   DETAILED DESCRIPTION: SHELLFSH

The coverage SHELLFSH contains the polygons with shellfish species.

5.1.1.   ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer

5.1.2.   ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the POLY_LUT table. The POLY_LUT is a lookup table with two attributes: ID and RARNUM. ID is a concatonation of atlas number (32), element number (7), and record number. ID values of zero are holes in polygons and do not contain information. In the look-up table, the value of RARNUM is determined for each unique combination of ELEMENT, SPECIES_ID, SEASON_ID, and CONC and links to the biology table, BIORES. The items in BIORES are: RARNUM, SPECIES_ID, CONC, SEASON_ID, EXPERT_ID, and ELEMENT. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be LOW, MEDIUM, or HIGH or an actual count of the numbers of species present in the polygon. SEASON_ID contains a numeric value according to the monthly presence of the species. Usually, there is one seasonality per species, but occasionally the same species has different monthly presence or breeding activity. When this occurs, a new record with a different seasonality is referenced.

The following SHELLFSH species are found in the Mississippi ESI atlas:

SPECIES ID	NAME
4	Pink shrimp
41	Atlantic bay scallop
43	American oyster (eastern)
49	Blue crab
50	White shrimp
51	Brown shrimp
74	Stone crab
82	Brackishwater clam
94	Southern quahog (hard clam)

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

integer

5.1. DETAILED DESCRIPTION: SOCECON

The coverage SOCECON contains the entity points for the human-use data.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Complete_Chains	SOCECON	character
Entity Points	SOCECON	character
	ID	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the PNTS_LUT table. PNTS_LUT is a lookup table with two attributes: ID and RARNUM. RARNUM is the link to the socioeconomic data found in the SOC_DATA table. The table SOCECON. DAT contains feature type, contact person, owner of the facility, phone number, and any comments regarding the site. The RARNUM value is distinguished from the biology RARNUM values by an "H" preceeding the unique number.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

integer

5.1.2.1. ATTRIBUTE LABEL:

SOCECON

5.1.2.2. ATTRIBUTE DEFINITION:

Identifies a line or point with a socioeconomic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC_DATA table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
A	Airport (Point)
AS	Archaeological Sites (Point)
BR	Boat Ramp (Point)
F	Ferry (Point)
M	Marina (Point)
NP	National Park (Chain)
RF	Recreational Fishing (Point)
SB	State Border (Chain)

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.   DETAILED DESCRIPTION: T_MAMMAL

The coverage T_MAMMAL contains the polygons with terrestrial mammal species.

5.1.1.   ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer

5.1.2.   ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the POLY_LUT table. The POLY_LUT is a lookup table with two attributes: ID and RARNUM. ID is a concatonation of atlas number (32), element number (9), and record number. ID values of zero are holes in polygons and do not contain information. In the look-up table, the value of RARNUM is determined for each unique combination of ELEMENT, SPECIES_ID, SEASON_ID, and CONC and links to the biology table, BIORES. The items in BIORES are: RARNUM, SPECIES_ID, CONC, SEASON_ID, EXPERT_ID, and ELEMENT. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be LOW, MEDIUM, or HIGH or an actual count of the numbers of species present in the polygon. SEASON_ID contains a numeric value according to the monthly presence of the species. Usually, there is one seasonality per species, but occasionally the same species has different monthly presence or breeding activity. When this occurs, a new record with a different seasonality is referenced.

The following T_MAMSP species are found in the Mississippi ESI atlas:

SPECIES ID	NAME
8	River otter
36	Bearer
37	Muskrat
38	Mink
43	Nutria
44	Northern raccoon
100	Wild hog

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

integer

6.0. DISTRIBUTION INFORMATION

6.1. DISTRIBUTOR
    6.1.1. CONTACT PERSON PRIMARY
        6.1.1.1. CONTACT PERSON:
        John Kaperick
        6.1.1.2. CONTACT ORGANIZATION:
        NOAA
    6.1.4. CONTACT ADDRESS
        6.1.4.1. ADDRESS TYPE:
        Physical Address
        6.1.4.2. ADDRESS:
        7600 Sand Point Way N.E., Bin C15700
        6.1.4.3. CITY:
        Seattle
        6.1.4.4. STATE OR PROVINCE:
        W A
        6.1.4.5. POSTAL CODE:
        98115
    6.1.5. CONTACT VOICE TELEPHONE:
    (206) 526-6400
    6.1.7. CONTACT FACSIMILE TELEPHONE:
    (206) 526-6329

6.2. RESOURCE DESCRIPTION:
ESI Atlas for Mississippi

6.3. DISTRIBUTION LIABILITY:
Although this data has been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

6.5. CUSTOM ORDER PROCESS
Contact NOAA for distribution options (see 6.1.1.).

7.0. METADATA REFERENCE INFORMATION

7.1. METADATA DATE:
19950829

7.2. METADATA REVIEW DATE:
19941115

7.4. METADATA CONTACT
    7.4.1. CONTACT PERSON PRIMARY
        7.4.1.1. CONTACT PERSON:
        Jill Petersen
        7.4.1.2. CONTACT ORGANIZATION:
        NOAA HMRAD
    7.4.3. CONTACT POSITION:
    GIS Manager
    7.4.4. CONTACT ADDRESS
        7.4.4.1. ADDRESS TYPE:
        Physical Address
        7.4.4.2. ADDRESS:
        7600 Sand Point Way, N.E., Bin C15700
        7.4.4.3. CITY:
        Seattle
        7.4.4.4. STATE OR PROVINCE:
        Washington
        7.4.4.5. POSTAL CODE:
        98115
    7.4.5. CONTACT VOICE TELEPHONE:
    (206) 526-6944
    7.4.7. CONTACT FACSIMILE TELEPHONE:
    (206) 526-6329
    7.4.8. CONTACT ELECTRONIC MAIL ADDRESS:
    jill_petersen@hazmat.noaa.gov.us

7.5. METADATA STANDARD NAME:
Content Standards for Digital Geospatial Metadata

7.6. METADATA STANDARD VERSION:
19940608